AMENDMENT AND PRESENTATION OF CLAIMS

Please replace all prior claims in the present application with the following claims, in which claims 2, 9, 16 and 23 are currently amended.

1. (Original) A network apparatus for providing performance enhancements of a communication network, comprising:

a plurality of communication interfaces configured to receive and to forward messages according to a prescribed protocol;

a plurality of modules configured to process the messages to effect performance enhancing functions; and

a plurality of buffers configured to store the received messages and messages that are generated by one of the plurality of modules,

wherein a portion of the plurality of buffers is shared by the plurality of modules based upon execution of a particular one of the performance enhancing functions, each of the plurality of buffers has a data structure that includes an expandable header to accommodate different message types.

2. (Currently Amended) The network apparatus according to claim 1, wherein the plurality of modules comprises a spoofing module configured to perform selective spoofing of one or more connections within the communication network by adding information to or deleting information from the messages to enhance performance of the communication network, a connection module configured to multiplex ~~a plurality of~~ the connections over a common backbone connection established over the communication network, a prioritization module configured to prioritize the connections for access to the backbone connection, and a path selection module configured to determine a path among a plurality of paths supporting the connections ~~to transmit the received messages~~ over the communication network.

3. (Original) The network apparatus according to claim 1, wherein the communication interface includes a local area network (LAN) interface, and a wide area network (WAN) interface, one of the plurality of buffers being designated as a LAN-to-WAN buffer that stores the receive messages in a LAN-

to-WAN direction, another one of the plurality of buffers being designated as a WAN-to-LAN buffer that stores the receive messages in a WAN-to-LAN direction.

4. (Original) The network apparatus according to claim 3, wherein the WAN is satellite network.

5. (Original) The network apparatus according to claim 1, wherein the data structure of the plurality of buffers comprises:

a specific header field that stores platform specific information;

a common header field the stores information known to the plurality of modules;

a payload field;

an offset field that indicates start of the payload field; and

a header growth field that provides a variable header length.

6. (Original) The network apparatus according to claim 5, wherein the common header field comprises:

a flag field that specifies direction of message flow;

a connection handle field that specifies handle of a backbone connection; and

an owner specific field that stores an owner specific header.

7. (Original) The network apparatus according to claim 1, wherein the prescribed protocol is the Transmission Control Protocol (TCP).

8. (Original) A method for providing performance enhancements of a communication network, the method comprising:

receiving messages according to a prescribed protocol;

processing the messages to effect performance enhancing functions via a plurality of modules; and

storing the received messages and messages that are generated by one of the plurality of modules in a plurality of buffers,

wherein a portion of the plurality of buffers is shared by the plurality of modules based upon execution of a particular one of the performance enhancing functions, each of the plurality of buffers has a data structure that includes an expandable header to accommodate different message types.

9. (Currently Amended) The method according to claim 8, wherein the plurality of modules comprises a spoofing module configured to perform selective spoofing of one or more connections within the communication network by adding information to or deleting information from the messages to enhance performance of the communication network, a connection module configured to multiplex ~~a plurality of~~ the connections over a common backbone connection established over the communication network, a prioritization module configured to prioritize the connections for access to the backbone connection, and a path selection module configured to determine a path among a plurality of paths supporting the connections ~~to transmit the received messages~~ over the communication network.

10. (Original) The method according to claim 8, wherein the receiving step is performed by a communication interface that includes at least one of a local area network (LAN) interface and a wide area network (WAN) interface, one of the plurality of buffers being designated as a LAN-to-WAN buffer that stores the receive messages in a LAN-to-WAN direction, another one of the plurality of buffers being designated as a WAN-to-LAN buffer that stores the receive messages in a WAN-to-LAN direction.

11. (Original) The method according to claim 10, wherein the WAN is satellite network.

12. (Original) The method according to claim 8, wherein the data structure of the plurality of buffers comprises:

a specific header field that stores platform specific information;

a common header field the stores information known to the plurality of modules;

a payload field;

an offset field that indicates start of the payload field; and

a header growth field that provides a variable header length.

13. (Original) The method according to claim 12, wherein the common header field comprises:

a flag field that specifies direction of message flow;

a connection handle field that specifies handle of a backbone connection; and

an owner specific field that stores an owner specific header.

14. (Original) The method according to claim 8, wherein the prescribed protocol in the receiving step is the Transmission Control Protocol (TCP).

15. (Original) A network apparatus for providing performance enhancements of a communication network, comprising:

means for receiving messages according to a prescribed protocol; and

means for processing the messages to effect performance enhancing functions, wherein the received messages and messages that are generated by processing means are stored in a plurality of buffers, a portion of the plurality of buffers being shared by the processing means based upon execution of a particular one of the performance enhancing functions, each of the plurality of buffers having a data structure that includes an expandable header to accommodate different message types.

16. (Currently Amended) The network apparatus according to claim 15, wherein the processing means comprises a spoofing module configured to perform selective spoofing of one or more connections within the communication network by adding information to or deleting information from the messages to enhance performance of the communication network, a connection module configured to multiplex ~~a plurality of~~ the connections over a common backbone connection established over the communication network, a prioritization module configured to prioritize the connections for access to the backbone connection, and a path selection module configured to determine a path among a plurality of paths supporting the connections ~~to transmit the received messages~~ over the communication network.

17. (Original) The network apparatus according to claim 15, wherein the receiving means includes at least one of a local area network (LAN) interface and a wide area network (WAN) interface, one of the plurality of buffers being designated as a LAN-to-WAN buffer that stores the receive messages

in a LAN-to-WAN direction, another one of the plurality of buffers being designated as a WAN-to-LAN buffer that stores the receive messages in a WAN-to-LAN direction.

18. (Original) The network apparatus according to claim 17, wherein the WAN is satellite network.

19. (Original) The network apparatus according to claim 15, wherein the data structure of the plurality of buffers comprises:

a specific header field that stores platform specific information;

a common header field the stores information known to the plurality of modules;

a payload field;

an offset field that indicates start of the payload field; and

a header growth field that provides a variable header length.

20. (Original) The network apparatus according to claim 19, wherein the common header field comprises:

a flag field that specifies direction of message flow;

a connection handle field that specifies handle of a backbone connection; and

an owner specific field that stores an owner specific header.

21. (Original) The network apparatus according to claim 15, wherein the prescribed protocol is the Transmission Control Protocol (TCP).

22. (Original) A computer-readable medium carrying one or more sequences of one or more instructions for providing performance enhancements of a communication network, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:

receiving messages according to a prescribed protocol;

processing the messages to effect performance enhancing functions via a plurality of modules; and

storing the received messages and messages that are generated by one of the plurality of modules in a plurality of buffers,

wherein a portion of the plurality of buffers is shared by the plurality of modules based upon execution of a particular one of the performance enhancing functions, each of the plurality of buffers has a data structure that includes an expandable header to accommodate different message types.

23. (Currently Amended) The computer-readable medium according to claim 22, wherein the plurality of modules comprises a spoofing module configured to perform selective spoofing of one or more connections within the communication network by adding information to or deleting information from the messages to enhance performance of the communication network, a connection module configured to multiplex ~~a plurality of~~ the connections over a common backbone connection established over the communication network, a prioritization module configured to prioritize the connections for access to the backbone connection, and a path selection module configured to determine a path among a plurality of paths supporting the connections ~~to transmit the received messages~~ over the communication network.

24. (Original) The computer-readable medium according to claim 22, wherein the receiving step is performed by a communication interface that includes at least one of a local area network (LAN) interface and a wide area network (WAN) interface, one of the plurality of buffers being designated as a LAN-to-WAN buffer that stores the receive messages in a LAN-to-WAN direction, another one of the plurality of buffers being designated as a WAN-to-LAN buffer that stores the receive messages in a WAN-to-LAN direction.

25. (Original) The computer-readable medium according to claim 24, wherein the WAN is satellite network.

26. (Original) The computer-readable medium according to claim 22, wherein the data structure of the plurality of buffers comprises:

a specific header field that stores platform specific information;

a common header field the stores information known to the plurality of modules;

a payload field;

an offset field that indicates start of the payload field; and

a header growth field that provides a variable header length.

27. (Original) The computer-readable medium according to claim 26, wherein the common header field comprises:

a flag field that specifies direction of message flow;

a connection handle field that specifies handle of a backbone connection; and

an owner specific field that stores an owner specific header.

28. (Original) The computer-readable medium according to claim 22, wherein the prescribed protocol in the receiving step is the Transmission Control Protocol (TCP).

29. (Original) A memory for storing information for providing performance enhancements of a communication network, the memory comprising a data structure including:

a specific header field that stores platform specific information;

a common header field the stores information known to the plurality of modules;

a payload field;

an offset field that indicates start of the payload field; and

a header growth field that provides a variable header length.

30. (Original) The memory according to claim 29, wherein the common header field comprises:

a flag field that specifies direction of message flow;

a connection handle field that specifies handle of a backbone connection; and

an owner specific field that stores an owner specific header.